



Continuation of Substance of Interview including description of the general nature of what was discussed: The examiner contacted applicant's representative Patrick M. Bergin Reg. No. 54,994 because the claims of the May 31st 2005 amendment do not require that the fluid flowing through the hollow portion of the transverse gradient coil windings be in direct contact with the conductive material itself, and because there is ambiguity in applicant's original specification paragraphs [0019], [0024], and [0025] concerning whether the applicant's gradient coil structure has a coolant flowing directly through the coil windings, as taught by the prior arts of Kaindl et al.), of if the coolant is prevented from directly interacting with the coil windings by means of a protective coating, (i.e. known in the prior art from Arz et al.), or through use of an actual cooling pipe inside the gradient coil windings (i.e. known in the art from Heid).

A coolant flowing inside the Directly cooled hollow gradient coil windings, where a protective coating on the windings, such as a plastic tubular shaped coating 3, on the hollow inner cooling channel 4, of the gradient coil conductor segments 1, which have a symmetric hollowed profiles 2, in order to support the plastic tubular shaped coating of the hollow inner cooling channel 4, in which water component 6, flows through the gradient coil windings within the plastic coated tubular hollow space 3, of the hollow channel 4, of the Arz. et al., US patent 6,741,152 B1, meets applicant's claim 1. [See Arz et al., abstract, figures 1, 2, col. 3 lines 30-62; col. 1 lines 55 through col. 2 line 38.

The Kaindl et al., references also teach directly cooling magnetic resonance gradient coil devices by means of "cooling lines that are embedded in the coil and through which a cooling agent flows, [See respectively the corresponding abstracts, figure 5, the first three lines of paragraph [0005] in the Kaindl et al., PreGrant Publication and col. 1 lines 30-33 in the corresponding US patent where Kaindl et al., teaches the "possibility of providing cooling by providing hollow electrical lines as the coil windings, through which a cooling agent flows, in combination with col. 1 lines 49-56; or paragraphs [0006], [0007] which teach that the windings in question are gradient coils.

The Heid references also show a shielded MRI transverse gradient coil arrangement where a hollow cylindrical conductor has a cooling medium flowing therethrough as per page 1 paragraph [0012] page 2 paragraphs [0021], [0022], [0023]; and figure 2; or correspondingly col. 2 lines 20-23; col. 3 lines 21-43 in combination with figure 2. Figure 2 shows that the gradient coil conductor 12 is hollow and that inside the hollow windings is a cooling pipe 11a, through which a cooling medium such as water is flowingly guided for purposes of cooling hollow gradient coil conductor 12.

The Damadian et al., reference US 6,369,571 B1 which was applied with the last office action, but was misidentified by applicant on page 8 of the May 31st 2005 response with the wrong US patent number, (i.e. applicant referred to Damadian et al., but cited Boemmel et al., US patent 6,111,412) was also discussed. The examiner notes that the Damadian et al., reference concerns static main magnetic MRI coils, not the gradient coils recited by applicant in the pending claims, but does have a coolant directly flowing through the static main magnetic coil windings, in direct contact with the metal windings.

The examiner attempted to resolve what the differences actually are between the prior art configurations recited above and the applicant's gradient coil cooling arrangement, in the telephonic interview with applicant's representative, on August 3rd 2005, who expressed a desire to resolve the examiner's concerns, unfortunately the applicant's representative, was unable to reach applicant in order to timely respond to the examiner's concerns. Applicant's representative indicated that the examiner's concerns would be addressed in the next response, and thanked the examiner for her attempt to speed up prosecution of the application, by the telephonic interview, which was not resolved because the applicant was unavailable to comment on the examiner's concerns.

The examiner indicated that if applicant desired a telephonic interview to clarify the differences in applicant's MR gradient coil structure, that applicant was invited to request one, since the configuration of applicant's invention, directly impacts which prior arts satisfy the requirements of applicant's claims.